Available online at www.sciencedirect.com

ScienceDirect

Procedia Economics and Finance 30 (2015) 848 – 862

Procedia Economics and Finance

www.elsevier.com/locate/procedia

3rd Economics & Finance Conference, Rome, Italy, April 14-17, 2015 and 4th Economics & Finance Conference, London, UK, August 25-28, 2015

Financial Openness and Total Factor Productivity in Turkey

Tuncay Serdaroğlu*

Planning Specialist, TR. Ministry of Development, Ankara, Turkey

Abstract

Financial openness, which can be defined as integration into international financial markets, can cause significant changes in countries' production structures and in the methods of doing business through the quantity and quality of international capital flows. The aim of this study is to analyze the effects of financial openness on TFP as a long-term structural indicator in Turkey. Empirical results reveal that the effect of financial openness on TFP is significant and positive together with the other determinants of TFP specified as human capital, innovation, foreign direct investment, financial development, macroeconomic stability and governance indicators in our sample period. However, the relationship between financial openness and TFP presents different pictures when sub periods are taken into consideration. The results of the analysis point out that structural policies addressing to TFP determinants are likely to increase the long term potential growth rate, the development level and the welfare of Turkey. Therefore, efforts should be made to enhance the capability and extent of exploiting the advantages of financial openness by means of comprehensive and complementary policies at macro level.

Peer-review under responsibility of IISES-International Institute for Social and Economics Sciences.

Keywords: Financial Openness; Total Factor Productivity; International Capital Flows; Turkish Economy.

1. Introduction

Following the advancement and proliferation of information and communication technologies, most of the countries regardless of their development level have been in a rapid tendency to global financial integration in the last 20 years. Financial openness, which can be defined as integration into international financial markets, can cause significant

*Corresponding author. Tel.: +90 312 294 60 13; fax: +90 312 294 60 77.
E-mail address: tserdaroglu@dpt.gov.tr

Peer-review under responsibility of IISES-International Institute for Social and Economics Sciences.
doi:10.1016/S2212-5671(15)01335-0

changes in countries' production structures and in the methods of doing business through the quantity and quality of international capital flows. Having these effects, financial openness phenomenon is regarded to have repercussions on economic growth and total factor productivity (TFP). Turkey, which has been open to trade since 1980, becomes financially open economy with the liberalization of capital flows in 1989. The focal point of this study is to investigate the effects of financial openness on TFP growth in the case of Turkey.

The theoretical literature points out financial openness to have positive effects on TFP through direct and indirect channels. However, empirical studies carried out especially for developing countries indicate that this effect is sometimes uncertain, sometimes positive and sometimes negative (See Köse, Prasad, Rogoff ve Wei, 2006, for an extensive survey). Unfettered capital flows may lead to boom and bust cycles particularly in the economies of insufficient institutional quality and financial depth. This has been used as a certain critique by prominent economists who evaluate increasing trend of financial globalization as a serious threat to global economic and financial stability (e.g., Rodrik, 1998; Bhagwati, 1998; Stiglitz, 2004). Financial crisis experiences following unfolding capital flows in the 1990's and 2000's reveal financially open developing countries to be more vulnerable to the crisis than the developed ones[†]. Hence, some of the economists offer the restriction of capital flows via various methods. Also, the International Monetary Fund (IMF) have changed its firm stance after the global crisis to put management of capital flows on the agenda in order to mitigate excessive boom and bust cycles in the financial markets[‡].

There are also certain studies displaying financial openness to have an important role in the development of countries. It is a widespread view that financial openness leads the national income levels of developing countries to converge developed countries' level and contributes to maintain macroeconomic stability at the global level[§]. Although, there is widely a consensus on the effects of trade openness, the views on the benefits and costs of financial globalization have still continued to be polarized. Especially, as the 2008-2009 global crises affects developing countries through their increasing financial ties paves the way to heated debate on the benefits of financial integration and its long-term economic repercussions. Therefore, the theory and country experiences are both significant when to evaluate the policy choices regarding financial openness. This study is an initial one in the Turkey case as far as we span the literature. The other feature of this study is to reveal the determinants of TFP in Turkey to a large extent.

2. The Literature Review on the Conceptual Framework

Sustainable and stable economic growth is important for countries to increase their long-term welfare. From the production side, economic growth stems from factor accumulation and TFP growth. Thus, TFP is an important component of economic growth. TFP growth leads to overcome the limits of factor accumulation (i.e. saving rate, demography, natural resources) and provides sustainable economic growth[**]. On the other hand, productivity by means of efficient use of resources contributes to increase potential growth rate and welfare in many ways[††]. According to Blanchard (2003), the structural indicators such as education, research and development (R&D) expenditures, technology transfer, trade openness, financial openness, institutional and financial development level and macroeconomic stability may steadily affect TFP and economic growth in the long-term.

According to traditional theory, increasing financial integration provides additional resources to the economy, so this will ease the domestic savings constraint against capital accumulation which is needed for productivity increases. On the other hand, capital inflows support capital deepening and induce to decrease risk premium through increasing the liquidity of capital markets (Henry, 2006; Fischer, 1998). These conditions enable the savings to be directed to productive economic activities via enhancing entrepreneurship in the country. Policy measures towards financial

---

† Mexico (1995), The Asian Crises (1997-1998), Russia (1998), Brazil (1998-1999), Turkey (2001), Argentina (2001-2002) can be regarded as certain examples to crisis which led to serious outcomes in the economy in which sudden stops in capital flows played a role.

‡ See IMF (2010) and IMF (2011) for arguments and experiences about capital flows management.

§ See also the claims of Fischer, 1998; Summers, 2000; Bekaert, Harvey and Lundblad 2004 and Henry, 2006 who find that financial openness leads to increase economic growth and wealth.

** CSLS (Centre for the Study of Living Standards), 2003 reveals the role of the productivity growth in developing countries on struggling poverty and income inequality.

†† In this study, productivity and TFP growth are used interchangeably.

liberalization remove various impediments that can cause inefficiency in the economy and provide capital stock to be used in the most efficient areas (Stiglitz, 2000). Finally, financial openness via international risk sharing lead to decrease capital risk premium, thereby its cost (Stulz, 1999b). Moreover, financial openness allows the countries to specialize in certain product and production methods, which can also contribute to productivity increases (Köse et al., 2006). All in all, financial openness is expected to have positive effects on economic growth and productivity.

A new approach has been developed for macroeconomic repercussions of financial openness. In the framework of this new view, it is also remarked that positive effects of financial openness depend on the countries ensuring the threshold conditions in specific areas (Köse, Prasad and Terrones, 2008)[‡‡]. Having considered these threshold areas also as the potential benefits constitute the focal point of the discussion about the benefits and costs of financial openness.

3. Main Macroeconomic Developments in Turkey Under Financial Openness

All countries have their own story related to financial openness experience. When the case of Turkey is evaluated since 1989, it can be observed mainly two sub-periods which can be characterized as the 1990's and 2000's taking TFP repercussions into consideration. The financial openness experience of the 1990's appeared in some sort as "learning by doing" process. Even though, an appropriate sequence of policy reforms were followed towards financial liberalization, financial openness period without sound macroeconomic fundamentals such as price stability, fiscal discipline and a sound financial system caused to unstable period with full of boom and bust cycles in the economy. The devastating effects of a simple external integration approach such as liberalizing all the markets in a dynamic economy with increasing international financial ties could not be anticipated (See the excellent surveys in this area by the Central Bank of the Republic of Turkey (CBRT) 2002; Boratav and Yeldan, 2002; Boratav 2006). Under these conditions the Turkish economy was inevitably experienced two serious economic crises in 1994 and 2001 affecting both the real and financial sectors (One can look at the deep elaboration of 1994 and 2001 economic crisis in Turkey by Koğar and Özmen, 2006 and Özatay 2009).

All in all, it can be stated that financial openness which was regarded as a panacea to main macroeconomic problems rather than appraising it as a final outcome led to insufficient realization of what was expected at the beginning of financial liberalization. When the crisis year of 2001 included in the sample, the average growth rate in 1991-2001 fell to 2.8 percent. As we have a look at the sources of growth in 1991-2001 period, the largest contribution to GDP comes from capital accumulation. In this period, TFP growth is realized as negative of 0.7 percent and contributed negatively to economic growth (See the Table 1). However, it is thought that that the low amount of TFP contribution throughout the 1990's despite large capital investments in this period can be explained to some extent by the tendency of unproductive residential investments and macroeconomic instabilities throughout this period.

Weak fundamentals of the economy and volatile feature of financial markets caused low levels of financial inflows. Net private capital inflows realized as 1.4 percent as a share of GDP in 1989-2001. The type of capital flows in this period also reflected macroeconomic instabilities. High risk premium stemming from domestic and external imbalances caused short term portfolio investment and other investment capital flows. The increase in other investment can be explained by domestic banking sector activities which led to external borrowing to finance public deficits[§§]. Furthermore, foreign direct investment inflows did not reach 0.5 percent level as a share of GDP in this period. The low levels of foreign direct investment inflows which are long-term and sound capital in nature resulted in not only a fragile nature of current account financing structure, but also limiting productivity increases via its facility of technology transfer and good governance.

Structural and regulatory reform program implemented decisively after 2001 crisis led to overcome macroeconomic vulnerabilities in the course of time which set serious constraints to realize the economy's potential. Additionally, the main significance of these comprehensive reforms is thought that they turn the focal point of

---

‡‡ The other leading studies researching threshold levels of financial openness are Prasad, Rogoff, Wei and Köse, 2003; Köse, Prasad and Taylor, 2011; and Bekaert, Harvey and Lundblad, 2011.

§§ As a result, external debts surged independently from external resources to finance the current account deficit (Boratav, 2006).

economic decisions from short-term to medium and long-term nature. Hence, they have broadened medium and long-term planning horizon of economic actors. Improving institutional quality, strengthening regulatory and supervisory mechanism of public sector and implementations towards improving investment environment provided to enhance productive activities led by the private sector (Pre-Accession Economic Programs 2002; 2004 and 2005; Kara, 2006; Özatay, 2008).

In 2002-2011 period, both the quantity and the quality of foreign capital inflows to Turkey changed. Liquidity abundance at the global level and maintaining macroeconomic stability for a long time has been influential in this development. This situation brought about improvement in risk sentiments and led to increase in capital inflows to Turkey considerably. Moreover, a large portion of these capital inflows was characterized as long-term feature rather than the speculative and short-term flows. In this period, the utilization of Turkey from external savings has also changed. Increasing share of foreign direct investments in GDP is thought to strengthen the competitiveness of the Turkish economy and help to improve the financing structure of the steadily rising current account deficits. Finally, international financial flows played a role in financing private sector investments with the help of improving macroeconomic balances and developing financial system, this facilitated foreign savings to be used in productive areas.

While net private capital inflows reached to 315.8 billion dollars in 2002-2011 period, its share in the GDP increased to 6.5 percent in the same period. As we have a look at the types of capital flows, the sum of net foreign direct investment inflows reached to 111 billion dollars in 2002-2011 period from the level of 12.7 billion dollars in 1989-2001 period. Besides macroeconomic stability, regulations towards improving business and investment environment and the accession prospects to the European Union are thought to contribute to this outcome.

Table 1. The growth rate of production factors (Percent)

	GDP	Capital Stock	Employment	TFP
1981-1990	5.2	6.8	1.7	1.6
1991-2000	3.7	7.4	1.5	0.0
1991-2001	2.8	7.3	1.4	-0.7
2002-2007	6.8	5.0	1.0	4.2
2002-2011	5.3	5.2	2.1	2.0
2008-2011	3,2	5,4	3,8	-1,2
1989-2011	4.0	6.4	1.8	0.5
1981-2011	4.4	6.4	1.7	0.9

Source: Author's calculation based on the data from T.R. Ministry of Development and TURKSTAT. Geometric growth rate is used.

Table 2. Contributions to Growth of production factors (Percent)

	Capital Stock	Employment	TFP
1981-1990	49,0	20,2	30,8
1991-2000	75,1	25,8	-0,9
1991-2001	95,8	30,0	-25,9
2002-2007	28,0	9,2	62,9
2002-2011	36,7	25,0	38,3
2008-2011	62,2	73,6	-35,8
1989-2011	59,0	27,5	13,5
1981-2011	55,1	24,4	20,5

Source: Author's calculation based on the data from T.R. Ministry of Development and TURKSTAT. Geometric growth rate is used.

4. Data and Methodology

4.1. Measuring the TFP

In order to measure the TFP, we basically draw on growth accounting framework by using Cobb-Douglas production function due to its widespread use and convenience. Consider the standard constant returns to scale production with Hicks-neutral technological progress assumption function written as[***]:

$$Y_t = A_t K_t^{\alpha} L_t^{\beta}, \quad \alpha + \beta = 1 \text{ ve } (\alpha, \beta) \epsilon (0, 1) \qquad \text{(Eq.1)}$$

Where Y is aggregate output (GDP), A is total factor productivity or technological progress, K and L denote aggregate capital stock and employment (i.e. the share of production factors in total income), the parameters of α and β represent output elasticity of capital and labor and t subscript denotes the years. Because, there is no officially published data of capital stock for Turkey, capital stock figures are estimated by using the perpetual inventory method, which is widely used in this area[†††]. In this method, certain assumptions are required for the service lives of investments, depreciation rate and the discard pattern of depreciation[‡‡‡].

The service life of total fixed capital investment is assumed to be 28 years by drawing on OECD (1999) study taking OECD country averages into account. Hence, the annual depreciation rate is found 3.57 percent. Further, it is assumed a linear discard pattern for depreciation of capital stock. Accordingly, initial capital stock is calculated for 1980 according to the Coe and Helpman (1995) method.

$$K_0 = I_0/(a + g) \qquad \text{(Eq.2)}$$

where K_0 is the initial capital stock, I0 is the initial fixed capital investments, a represents the depreciation rate and g denotes average growth rate of fixed capital investments in 1980-2011. The time series related to capital stock are built by the following identity.

$$K_t = I_{t-1} + (1 - a)K_{t-1} \qquad \text{(Eq.3)}$$

We basically benefit from the Turkish Statistical Institute (TURKSTAT) database to constitute GDP, employment and total fixed capital investment figures.

4.2. Estimation Results for TFP

The logarithmic form of (Eq.1) can be specified as the following equation[§§§]:

$$\ln Y_t = c_0 + \alpha \ln K_t + (1 - \alpha) \ln L_t + \varepsilon_t \qquad \text{(Eq.4)}$$

Due to 2002-2011 period differs from the previous years as mentioned above, a dummy variable (D0211) is defined for this period in order to get better estimation result. Estimation result is provided in the table 3[****].

[***] Hicks-neutral technological progress means that technology increases capital and labor productivity at the same rate.

[†††] Although, there is no officially published data of capital stock for Turkey, one can find estimations on capital stock for Turkey in Maraşlıoğlu and Tıktık, 1991; Saygılı and Cihan, 2008; Saygılı, Cihan and Yurtoğlu, 2005 and Yaşar, 2008.

[‡‡‡] One can refer to OECD, 2009 and Meinen, Verbiest and Paul de Wolf, 1998 in order to find out conceptual explanations on how to estimate capital stock and the application of the perpetual inventory method.

[§§§] High frequency data show that the TFP is closely related to national income and working hours. Therefore, by taking capacity utilization and working hours in total industry into consideration, these short-term effects can be controlled. Furthermore, human capital is also taken as a factor of production in some studies (See Mankiw et al., 1992). Controlling these factors enable to attain a purified TFP estimation. Nevertheless, the lack of proper and sufficient time series reflecting short-term effects towards the whole economy put a limit on incorporating these effects. However, it is thought that these deficiencies do not cause an important problem in the setting of this study. For example, human capital which is not used as a production factor in the production function is included as a determinant of the TFP in economic models. In addition to this, using Hodrick-Prescott (HP) filter for attaining TFP figures serves also a function in controlling these short-term effects.

[****] Due to the year 1987 constitutes a base year for national account figures, aforementioned year is determined as the initial year for the sample of TFP estimation.

Table 3. Estimation Result of Production Function for Turkey

Dependent Variable: LOG(Y)
Method: Ordinary Least Squares
Sample: 1987 - 2011
Number of Observation: 25

$LOG(Y_t) = C(1) + C(2)*LOG(K_t) + (1-C(2))*LOG(L_t) + C(3)*D0211$

	Coefficient	Standard Deviation	t-statistics	p-value
C(1)	4.794963	0.448260	10.69683	0.0000
C(2)	0.375092	0.051330	7.307491	0.0000
C(3)	0.115304	0.036691	3.142526	0.0047

R-square	0.971290	Sum of squared residuals	0.0561
Adjusted R-square	0.968680	Log Probability	40.781
F-Statistic	372.1423	Durbin-Watson Statistic	1.2987
Prob. (F-Statistic)	0.000000		

Note: The equation is estimated by using E-Views 7.

Estimation result shows that all of the coefficients are statistically significant at 99 percent confidence interval. From the regression result, the output elasticity of capital (α) is found 0.38 and the output elasticity of labour is found as 0.62 because of constant returns to scale assumption[††††]. From the estimation result of the equation 4, the TFP series are attained by using the formula below:

$$A_t = \exp(lnY_t - \alpha\, lnK_t - (1-\alpha)\, lnL_t) \quad \text{(Eq.5)}$$

The summary information related to construction of the explanatory variables used in this study can be presented in the table 4.

Table 4. Summary information about the explanatory variables[‡‡‡‡]

Definitions of the variables		Period	Source	Information
TFP	Total factor productivity	1987-2011	Calculation	Calculated as a Solow residual
FO	Financial openness	1989-2011	CBRT	Total assets and liabilities in the capital and financial account as a share of GDP.
School	Human capital	1984-2011	TR. Ministry of Development	Gross schooling rate in higher education
R&D	Innovation	1990-2010	TÜBİTAK	The number of full-time equivalent R&D personnel
TO	Trade openness	1980-2011	TURKSTAT	The total of exports and imports as a share of GDP
Exp	Export intensity	1980-2011	TURKSTAT	The share of exports in GDP
FDI	Foreign direct investment	1991-2011	CBRT	The share of foreign direct investment inflows in GDP
Credit	Financial sector development	1986-2011	TR. Ministry of Development	The share of total net domestic credit volume in GDP
Inst	Institutional quality	1996-2010	World Bank	Proxied by the rule of law index in Kaufmann et al. (2010)
Mİİ	Macroeconomic instability index	1989-2011	Calculation	A composite index constructed according to İsmihan and Özcan (2009)
MPI	Market pressure index	1990-2011	Calculation	A composite index constructed according to Özatay (2009)

†††† As the output elasticities of coefficients are subject to change with respect to the structure of the economy and the estimation of the sample period, there is no consensus on the values of these parameters. While, İsmihan and Özcan (2005) indicates that the coefficient of capital may take the values between 0.35 and 0.65, Bosworth and Collins (2003) in their study assumes this coefficient to be 0.35 for the countries including also Turkey.

‡‡‡‡ The database constructed can be seen in the appendix A1 and A2.

Due to this study investigates the TFP-financial openness relationship in the Turkish case, the time series econometric framework is used in the analyses. Because every country may have its own experience under financial openness conditions, it is thought that the method applied in this study fits for the purpose. By supporting the equations with the various diagnostic tests, the consistency and soundness of the analyses results are pursued. (See the appendix B). In order to purify the series from the short-term effects, all series are smoothed via the HP-filter. Further, stationary series are used according to unit root test results which are presented in the appendix C.

By taking the beginning of the capital account liberalization in Turkey, the econometric models are estimated in 1989-2011 period to the extent that the samples of explanatory variables chosen make it possible. Before, presenting the regression results, it is useful to remark an econometric problem related to reverse causality which is the TFP growth per se leads to increase in the capital inflows. Accordingly, the question arises whether the productivity increases observed in the 2000's influenced the capital flows to Turkey. It is considered as a low probability that capital flows pursued the TFP increases in the case of Turkey. In this period, rather than TFP increases, easy external borrowing facilities stemming from the global liquidity abundance and an intensive privatization process reflected a portion of foreign direct investments are effective in rising capital inflows.

In this study, two types of equation groups are formed in order to identify the effect of financial openness on TFP growth with a long-term view. While the equation group specified in the equation 6 tries to find out the determinants of TFP apart from financial openness, the equations in the second group (See Eq.7) display how the situation will change when financial openness is added to other determinants of the TFP. There are two main reasons to apply this method. The first reason is to find out sound equations free of econometric problems. The second reason is to reveal whether financial openness is a significant explanatory variable taking the other determinants of the TFP into consideration.

The first equation group can be expressed as the following:

$$\Delta TFP_t = \alpha_0 + \gamma' z_t + \mu_t + \varepsilon_t \quad \text{and} \qquad \text{(Eq.6)}$$

$z_t \in Z_t$ = {School, R&D, TO, Exp, FDI, Credit, Inst., Mİİ, MPI}

In this general form; ΔTFP shows the tfp increases, α0 is the constant term, zt denotes the variables chosen for the determinants of the tfp other than financial openness, γ' represents the coefficients of zt , dummy variables used for the crisis years are denoted by μ, white noise error term is ε and finally t represents the years from 1989 to 2011.

The second groups of econometric models can be expressed as the following:

$$\Delta TFP_t = \alpha_0 + \beta' FO_t + \gamma' z_t + \mu_t + \varepsilon_t \qquad \text{(Eq.7)}$$

In this framework, it can be revealed how the relations analyzed in the first group regressions are changed when financial openness is added to the same equations.

5. REGRESSION RESULTS

The results of the equations expressed in (Eq.6) are displayed in the table 5. The sequence of equations are designed in a framework that enables to make the robustness check and to identify the effects of alternative TFP determinants. The explanatory variables included in the first equation are chosen according to the highest correlation coefficients they have with the TFP (See the correlation matrix depicted in the appendix D). Accordingly, the first equation is considered as a basis equation. Second equation is formed in order to see the robustness of the macroeconomic stability with respect to different measures of it. With the help of the third equation, the importance of trade openness is analyzed. In the fourth equation, export intensity is used in the place of trade openness which is closely related to export intensity. In the fifth equation, the effect of the institutional quality and governance indicator is examined. Because of autocorrelation problem in the fifth equation, sixth equation is estimated in order to attain sound results. Due to limited time series data for institutional quality, macroeconomic stability indicator has removed from the

regression to avoid the degrees of freedom problem[§§§§]. Finally, the last equation is estimated in order to see the sensitivity of the basis equation with respect to alternative specifications.

Table 5. The determinants of the TFP growth

	Dependent Variable is the TFP growth						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Constant term	-0,0200*** [0,0014]	-0,0182*** [0,0019]	-0,0291*** [0.0053]	-0,0369*** [0,0094]	-0,0060 [0,0117]	-0,0047* [0,0021]	-0,0200*** [0,0018]
Human capital	0,1124*** [0,0138]	0,0846*** [0,0193]	0,0964*** [0,0170]	0,0999*** [0,0150]	0,1068*** [0,0247]	0,1056*** [0,0206]	
Innovation	0,1527*** [0,0145]	0,1205*** [0,0205]	0,2012*** [0,0307]	0,2145*** [0,0364]	0,0295 [0,0933]	0,0195 [0,0181]	
Foreign direct investment	3,3098*** [0,6034]	3,2114*** [0,7119]	3,2531*** [0,4848]	3,1840*** [0,4790]	3,8362*** [0,5573]	3,8641*** [0,4668]	4,2943*** [0,6894]
Financial development	0,1601*** [0,0160]	0,1906*** [0,0215]	0,1398*** [0,0202]	0,1360*** [0,0211]	0,2186*** [0,0416]	0,2228*** [0,0153]	0,1517*** [0,0207]
Macroeconomic instability index	-0,0023*** [0,0002]		-0,0034*** [0,0006]	-0,0036*** [0,0007]	-0,0002 [0,0019]		-0,0023*** [0,0003]
Market pressure index		-0,0022*** [0,0003]					
Trade openness			-0,0043 [0,0026]				
Export intensity				-0,0053 [0,0030]			
Institutional quality					0,0235 [0,0213]	0,0258*** [0,0022]	
(Human capital*innovation)							0,12960*** [0,0167]
R^2	0,9990	0,9987	0,9995	0,9995	0,9994	0,9994	0,9982
The Sample (Adjusted)	1991-2010	1991-2010	1991-2010	1991-2010	1996-2010	1996-2010	1991-2010

Note: The equation is estimated by using E-Views 7.

The regression results attained from the first group of equations display human capital, innovation, foreign direct investment, financial development, macroeconomic stability and institutional quality are the main determinants of the TFP increases in Turkey. As we have scrutinized other outcomes of the first group equations, it is observed that trade openness and export intensity insignificant to explain the TFP increases[*****]. However, the essential factor for TFP increases is to what extent trade openness to stimulate technology intensive sectors in the economy. It is thought that the effects of trade openness on TFP increases can only be possible with enhancing the technology content in the value added rather than conducting generally an assembly line of production. While aforementioned explanations can also be valid for insignificance of export intensity on TFP increases, it is thought that the positive effects of export intensity on TFP depend on reaching the optimal scales of high technology intensive production.

§§§§ The reason of this choice is that macroeconomic stability is closely related to institutional quality indicator according to the correlation matrix in the appendix D.

***** The diagnostics related to third and fourth equations in the table 5 display specification errors according to Ramsey RESET test. This situation caused the OLS estimators to be biased and inconsistent. Therefore, the third and fourth equations should be considered cautiously.

Table 6. The determinants of the TFP growth with financial openness

	Dependent variable is the TFP growth						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Constant term	-0,0250*** [0,0016]	-0,0244*** [0,0019]	0,0283*** [0,0054]	-0,0322** [0,0105]	-0,0054 [0,0193]	-0,0261*** [0,0035]	-0,0247*** [0,0012]
Human capital	0,1678*** [0,0175]	0,1561*** [0,0213]	0,1503*** [0,0325]	0,1508*** [0,0304]	0,1044 [0,0668]	0,2501*** [0,0423]	
Innovation	0,1640*** [0,0112]	0,1382*** [0,0153]	0,1847*** [0,0342]	0,1920*** [0,0419]	0,0258 [0,1365]	0,1347*** [0,0226]	
Foreign direct investment	3,4968*** [0,4845]	3,5487*** [0,5571]	3,4652*** [0,4991]	3,4269*** [0,5054]	3,8443*** [0,6305]	3,9974*** [0,7375]	3,4396*** [0,4102]
Financial development	0,1017*** [0,0219]	0,1114*** [0,0261]	0,0996*** [0,0227]	0,0983*** [0,0229]	0,2219* [0,0949]		0,1054*** [0,0152]
Macroeconomic instability index	-0,0020*** [0,0002]		-0,0025*** [0,0009]	-0,0027*** [0,0010]	-0,0002 [0,0025]		-0,0020*** [0,0002]
Market pressure index		-0,0018*** [0,0002]					
Trade openness			-0,0020 [0,0031]				
Export intensity				-0,0026 [0,0037]			
Institutional quality					0,0243 [0,0299]	0,0117*** [0,0034]	
(Human capital*innovation)							0,1645*** [0,0106]
Financial openness	1,5888*** [0,4580]	1,9953*** [0,5039]	1,3414** [0,6064]	1,3148* [0,6122]	-0,0489 [1,2472]	4,1579*** [0,5007]	1,4990*** [0,2693]
R^2	0,9995	0,9993	0,9995	0,9995	0,9994	0,9986	0,9995
The Sample (Adjusted)	1991-2010	1991-2010	1991-2010	1991-2010	1996-2010	1996-2010	1991-2010

Note: The equation is estimated by using E-Views 7.

The regression result of the second group equations formed by adding of financial openness variable to the first one reveals that openness to capital flows affects the TFP growth significantly positive in the investigation period. This result in the table 6 carries importance in terms of direct transmission mechanism of financial openness which is stated above. On the other hand, the results seem at first sight to be surprising when taking lots of nominal instabilities of the Turkish economy experienced under financial openness into account. However, one should note that this analysis reflect the long-term relation of structural parameters. Further, it is thought that the appearance of the effects of structural parameters (i.e. financial openness) on the TFP growth requires a period that can be expressed as such decades.

Furthermore, the new approach asserts that the macroeconomic outcomes of financial openness are subject to change based on the threshold level of the economies in these areas. From the analytical results, it can be intuitively stated that the Turkish economy exceeds a certain threshold levels at these areas in the long-term. It is thought that the TFP growth observed in 2000's reflect this situation. In this framework, financial openness in the Turkish case can be indicated to reach a maturity that can create dynamic gains in the economic growth process. Furthermore, the results reveal the indispensable importance of macroeconomic stability to realize the productivity gains under financial openness experienced in Turkey. Macroeconomic stability is significant not only because it is a determinant of the TFP, but also it provides to come out the positive effects of other TFP determinants†††††.

††††† The sixth equation in the table 5 reveals this fact for innovation activity.

6. Conclusion

The aim of this study is to analyze the effects of financial openness on TFP as a long-term structural indicator in Turkey. The first group regression results show that human capital, innovation, foreign direct investment, financial development, macroeconomic stability and institutional quality are the main determinants of the TFP increases in Turkey. The regression result of the second group equations formed by adding of financial openness variable to the first one reveals that financial openness is also a TFP determinant with the other factors which affects the TFP growth significantly positive in Turkey in 1989-2011.

The aim of Turkey which is stated in the Tenth Development Plan (2014-2018) is to enter to the group of high income countries. This aim requires the transformation of the economy to a structure based on productivity. This study is thought to shed light the policy areas that need to be improved in Turkey. The results of the analysis point out that structural policies addressing to TFP determinants are likely to increase the long term potential growth rate and the welfare of Turkey. It needs to be emphasized that the effects of financial openness on TFP growth also depend on improvements to be made in TFP determinants. Therefore, efforts should be made to enhance the capability and extent of exploiting the advantages of financial openness by means of comprehensive and complementary policies at macro level. These structural policies not only required for financial openness, but also for the other TFP determinants to be effective and to be reaped the benefits of them at most.

Financial openness offer opportunities for the countries to increase their competitiveness. At the same time, the widespread crisis experiences evidenced that it is impossible to stand fully aside from the risk of financial openness. As a matter of fact, a closed economy cannot be sustainable in an information-communication era. Therefore, it should be looked for the ways that can improve the benefits-risks arithmetic of the financial openness. These measures address the structural policies in the aforementioned transformation areas in the economy.

Nowadays, the world economy is strongly integrated to each other via the financial ties. This situation leads to multilateral effects of macroeconomic policies of the countries which in turn influencing international capital flows. In this regard, reducing the risks of financial openness cannot be overcome by individual countries per se. The maintenance of financial integration with financial innovations brings about new financial risks. Therefore, it is thought as essential that international financial architecture tried to be built up after global crisis should present a framework that considers global financial stability as a public good.

Appendix A1: The raw data used in the estimation of the TFP (OPTIONAL)

	GDP (1998 Prices, Thousand TL.)	Capital Stock (1998 Prices, Thousand TL.)	Employment (Thousand People)
1980	30,409,328.0	43,116,364.7	14,266.9
1981	31,886,191.0	45,893,209.9	14,391.3
1982	33,022,409.0	48,676,641.1	14,543.0
1983	34,663,955.0	51,134,878.3	14,691.4
1984	36,990,584.0	53,868,818.7	14,918.6
1985	38,559,523.0	57,183,887.8	15,172.9
1986	41,263,308.0	61,125,479.8	15,454.8
1987	45,177,429.0	65,957,249.9	15,811.2
1988	46,135,348.0	71,837,904.7	16,052.8
1989	46,251,445.0	77,464,533.0	16,556.5
1990	50,532,158.0	83,058,515.6	16,844.5
1991	51,000,344.0	90,005,037.4	17,525.1
1992	54,052,353.0	96,776,032.1	17,680.4
1993	58,399,252.0	103,943,372.8	16,808.2
1994	55,213,184.0	113,940,784.1	18,177.4
1995	59,183,687.0	121,311,454.8	18,704.4
1996	63,329,692.0	129,709,852.0	19,256.8
1997	68,097,659.0	139,723,732.2	19,265.9
1998	70,203,147.0	151,624,429.6	19,787.5
1999	67,840,570.0	162,255,921.4	20,032.8
2000	72,436,399.0	169,906,871.0	19,608.5
2001	68,309,352.0	179,632,894.5	19,556.7
2002	72,519,832.0	184,277,881.0	19,402.2
2003	76,338,192.0	190,381,101.1	19,214.1
2004	83,485,590.0	198,063,537.0	19,632.0
2005	90,499,731.0	209,578,971.3	20,067.0
2006	96,738,320.0	223,915,595.0	20,423.0
2007	101,254,625.0	240,633,076.5	20,738.0
2008	101,921,730.0	257,519,846.0	21,194.0
2009	97,003,115.0	272,235,003.7	21,277.0
2010	105,885,643.9	281,870,352.0	22,594.0
2011	114,873,979.3	297,074,130.0	24,110.0

Source: T.R. Ministry of Development, Economic and Social Indicators (1950-2010) and author's calculation.

Appendix A2: The raw data of the explanatory variables (OPTIONAL)

	TFP	FO	School	R&D	TO	Exp.	FDI	Credit	Inst.	Mİİ	MPI
1980					12.3	3.3					
1981					14.1	4.9					
1982					16.5	6.5					
1983					17.6	6.7					
1984		1.18	8.0		21.8	8.7					
1985		2.04	9.7		21.3	8.8					
1986		1.54	10.7		18.1	7.3		19.0			
1987	125.3	1.12	11.3		20.8	8.7		20.0			
1988	122.8	-1.74	11.7		21.4	9.6		17.8			
1989	117.4	-1.34	12.8		19.0	8.1		15.2		0.47	
1990	123.6	1.53	14.5	16.2	17.4	6.4		14.7		0.40	0.10
1991	118.1	-0.59	15.7	15.0	17.1	6.7	0.45	15.9		0.49	0.14
1992	121.1	1.01	16.4	15.7	17.6	6.9	0.43	17.2		0.51	0.18
1993	131.5	3.56	18.1	16.1	18.6	6.4	0.31	17.7		0.49	0.15
1994	114.3	-2.56	22.2	16.9	23.7	10.4	0.36	15.1		0.79	0.38
1995	117.6	-0.04	22.1	18.5	25.1	9.5	0.41	15.7		0.51	0.22
1996	120.5	0.38	22.4	22.0	27.4	9.5	0.37	18.5	-0.13	0.53	0.20
1997	126.0	1.42	23.2	23.4	29.4	10.3	0.33	20.4	-0.12	0.53	0.20
1998	123.9	-0.48	25.7	22.9	27.1	10.0	0.35	16.7	-0.10	0.53	0.13
1999	115.8	-0.15	27.4	24.3	27.0	10.7	0.33	16.6	-0.09	0.56	0.15
2000	123.2	4.71	27.8	27.0	30.8	10.4	0.64	17.2	-0.08	0.50	0.09
2001	113.9	-0.83	28.0	27.7	37.1	16.0	1.72	15.0	-0.08	0.75	0.22
2002	120.4	0.59	30.8	29.0	37.6	15.5	0.25	10.4	-0.09	0.61	0.07
2003	126.0	1.01	35.8	38.3	38.3	15.5	0.23	11.8	0.10	0.41	-0.01
2004	133.9	3.40	36.8	40.0	40.9	16.1	0.30	14.9	0.18	0.23	0.00
2005	140.2	4.03	38.4	49.3	39.3	15.2	1.76	19.5	0.15	0.09	0.02
2006	144.6	6.05	43.4	54.5	42.5	16.1	3.33	23.3	0.03	0.07	0.06
2007	145.9	5.75	46.0	63.4	42.8	16.6	2.95	26.6	0.00	0.05	-0.03
2008	141.2	5.10	47.8	67.2	45.4	18.0	2.01	29.2	0.07	0.08	0.08
2009	131.3	1.51	54.2	73.5	39.5	16.6	1.02	31.9	0.09	0.20	-0.02
2010	136.3	6.00	67.0	82.0	40.9	15.6	0.85	37.2	0.10	0.10	0.02
2011	139.2	8.43	67.0		48.5	17.4	2.05			0.09	0.06

Note: See the table 4 in the text to view the source and the definitions related to this database.

Appendix B: Diagnostic Tests

Table 5. The determinants of the TFP growth							
	1	**2**	**3**	**4**	**5**	**6**	**7**
Heteroscedasticity	0,197	0,267	0,166	0,175	0,104	0,095	0,314
AR (2)	0,095	0,212	0,875	0,875	0,022*	0,056	0,057
ARCH (1-1)	0,841	0,548	0,931	0,906	0,072	0,130	0,994
Normal distribution	0,832	0,807	0,385	0,371	0,715	0,706	0,896
RESET Test	0,630	0,537	0,001**	0,003**	0,000	0,083	0,055
Table 6. The determinants of the TFP growth with financial openness							
	1	**2**	**3**	**4**	**5**	**6**	**7**
Heteroscedasticity	0,055	0,224	0,039*	0,040*	0,121	0,117	0,073
AR (2)	0,155	0,092	0,170	0,162	0,007**	0,052	0,212
ARCH (1-1)	0,224	0,932	0,182	0,192	0,080	0,218	0,221
Normal distribution	0,974	0,946	0,918	0,915	0,701	0,843	0,975
RESET Test	0,937	0,232	0,051	0,075	0,000**	0,094	0,857

Note: * and ** indicate that the null hypothesis are rejected at 5 percent and 1 percent critical levels, successively.

Appendix C: The ADF unit root test results (OPTIONAL)

Variables	**Sabitsiz-Trendsiz Model**		**Sabitli-Trendsiz Model**		**Sabitli-Trendli Model**	
	ADF test stat.	**P value**	**ADF test stat.**	**P value**	**ADF test stat.**	**P value**
TFP	3,420 (6)	1,000	1,420 (3)	0.999	-4,097 (5)**	0,018
FO	1,548 (2)	0,966	-2,051 (3)	0,265	-0,851 (2)	0,946
Δ (FO)	-0,570 (1)	0,460	-1,296 (2)	0,614	-2,500 (1)	0,325
Δ^2 (FO)	-0,958 (0)	0,293	-2,888 (1)*	0,062	-3,041 (1)	0,142
School	2,023 (5)	0,987	2,879 (6)	1,000	-1,583 (5)	0,767
Δ (School)	1,200 (4)	0,934	-1,220 (2)	0,648	-3,353 (3)*	0,083
R&D	1,862 (3)	0,980	6,304 (2)	1,000	-1,645 (4)	0,728
Δ (R&D)	2,487 (2)	0,994	0,345 (2)	0,974	-7,610 (1)***	0,000
TO	0,790 (3)	0,878	0,620 (4)	0,988	-4,301 (3)**	0,011
Exp.	1,304 (3)	0,948	1,240 (4)	0,998	-3,775 (3)**	0,033
FDI	-1,125 (7)	0,229	1,995 (5)	1,000	1,699 (5)	1,000
Δ (FDI)	-1,379 (3)	0,152	0,803 (6)	0,992	-4,046 (4)**	0,020
Credit	2,113 (5)	0,988	-2,544 (5)	0,122	2,071 (4)	1,000
Δ (Credit)	-0,752 (3)	0,378	1,562 (4)	0,999	-0,475 (4)	0,975
Δ^2 (Credit)	-0,837 (2)	0,341	-1,458 (2)	0,533	-4,101 (3)**	0,023
Inst.	-1,507 (3)	0,119	-3,183 (3)**	0,047	-2,192 (3)	0,452
Mİİ	-2,727 (3)***	0,009	-2,298 (3)	0,182	-3,481 (3)**	0,071
MPI	-5,462 (2)***	0,000	-0,718 (2)	0,819	-4,090 (4)**	0,026

Note: The values in the paranthesis indicate the optimal lag-length according to Schwarz information criteria. "Δ," represents first order difference operator and "Δ^2" denotes second order difference operator. *, ** and *** are 10 percent, 5 percent and 1 percent significance levels, successively.

Appendix D: The Correlation Matrix

	TFP	FO	School	R&D	FDI	Credit	Mİİ	MPI	TO	Exp.	Inst.
TFP	1.00										
FO	0.87	1.00									
School	0.69	0.72	1.00								
R&D	0.77	0.69	0.98	1.00							
FDI	0.72	0.64	0.55	0.59	1.00						
Credit	0.63	0.61	0.80	0.84	0.47	1.00					
Mİİ	-0.94	-0.85	-0.76	-0.82	-0.66	-0.70	1.00				
MPI	-0.71	-0.68	-0.66	-0.70	-0.36	-0.41	0.79	1.00			
TO	0.65	0.64	0.87	0.83	0.65	0.48	-0.66	-0.63	1.00		
Exp.	0.56	0.51	0.83	0.81	0.61	0.43	-0.59	-0.58	0.98	1.00	
Inst.	0.66	0.54	0.69	0.69	0.24	0.35	-0.75	-0.80	0.75	0.71	1.00

Note: The correlation coefficients are built by the raw data stated in the appendix A2.

References

Bekaert, G., C. R. Harvey, C. Lundblad, 2011, "Financial Openness and Productivity", *World Development*, Vol. 39, No. 1, pp. 1-19.

Bhagwati, J., 1998, "The Capital Myth: The Difference between Trade in Widgets and Dollars," *Foreign Affairs*, Vol. 7, No. 3, pp. 7-12.

Blanchard, O., 2003, "Macroeconomics", Pearson Education International, Third Edition.

Boratav, K., 2006, Türkiye İktisat Tarihi 1908-2005, İmge Kitabevi, Ankara.

Boratav, K., E. Yeldan, 2002, "Turkey, 1980–2000: Financial liberalization, Macroeconomic (In)stability, and Patterns of Distribution", CEPA and The New School for Social Research.

Bosworth, B., S. M. Collins, 2003, "The Empirics of Growth: An Update", Brookings Papers on Economic Activity, Brookings Institution.

Central Bank of the Republic of Turkey (CBRT), 2002, The Impact of Globalization on the Turkish Economy, Ankara.

Central Bank of the Republic of Turkey (CBRT), 2012 April, Balance of Payment Statistics.

Centre for the Study of Living Standards (CSLS), 2003, "Productivity Growth and Poverty Reduction in Developing Countries", Background Paper prepared for the 2004 World Employment Report of the International Labour Organization by CSLS.

Coe, D.T., E. Helpman, 1995, "International R&D Spillovers", Economic European Review, Vol. 39, pp. 859-887.

Doidge, C., A. Karolyi, R. Stulz, 2005, "Why Do Countries Matter So Much More for Corporate Governance?" Ohio State University Working Paper

Fischer, S., 1998, "Capital Account Liberalization and the Role of the IMF," in "Should the IMF Pursue Capital-Account Convertibility?" Essays in International Finance No. 207, Princeton University, pp. 1-10.

Henry, P. B., 2006, "Capital Account Liberalization: Theory, Evidence and Speculation", *NBER Working Paper Series*, No. 12698, Cambridge.

IMF, 2007, Reaping the Benefits of Financial Globalization.

IMF, 2010, Recent Experiences in Managing Capital Inflows – Cross-Cutting Themes and Possible Policy Framework.

IMF, 2011, The Fund's Role Regarding Cross-Border Capital Flows.

İsmihan, M., K. M. Özcan, 2005, "Sources of Growth in the Turkish Economy: 1960-2004", Economic Research Forum, 12th Annual Conference, Cairo, Egypt, 19-21 December.

İsmihan, M., K. M. Özcan, 2009, "Productivity and Growth in an Unstable Emerging Market Economy: The Case of Turkey, 1960-2004, *Emerging Market Finance & Trade*, Vol. 45, No. 5, pp. 4-18.

Kaminsky, G. L., C. M. Reinhart, C. A. Vegh, 2005, "When It Rains, It Pours: Procyclical Capital Flows and Macroeconomic Policies," ed. M. Gertler and K. Rogoff, NBER Macroeconomics Annual 2004, Vol. 19, MIT Press.

Kara, A. H., 2006, "Turkish Experience with Implicit Inflation Targeting", CBRT Research and Monetary Policy Department Working Paper, No. 06/03.

Kaufmann, D., A. Kraay, M. Mastruzzi, 2010, "The Worldwide Governance Indicators: Methodology and Analytical Issues", *World Bank Policy Research Working Paper*, No. 5430.

Klein, M., G. Olivei, 2006, "Capital Account Liberalization, Financial Depth, and Economic Growth" Working Paper, Tufts University.

Köse, M. A., E. S. Prasad, K. Rogoff, S. Wei, 2006, "Financial Globalization: A Reappraisal, IMF Working Paper, No. 06/189.

Köse, M. A., E. S. Prasad, A. D. Taylor, 2011, "Thresholds in the Process of International Financial Integration", Journal of International Money and Finance, Vol. 30, pp. 147-179.

Köse, M. A., E. S. Prasad, M. E. Terrones, 2008, "Does Openness to International Financial Flows Raise Productivity Growth?", IMF Working Paper, No. 08/242.
Levine, R., 2001, "International Financial Liberalization and Economic Growth", Review of International Economics, Vol. 9, No. 4, pp. 688-702.
Lucas, R.E., 1988 "On the Mechanics of Economic Development", *Journal of Monetary Economics*, Vol. 22, pp. 3-42.
Mankiw, N. G., E. S. Phelps, P. M. Romer, 1995 "The Growth of Nations", Brookings Papers on Economic Activity, Vol. 1995, No. 1, 25th Anniversary Issue, pp. 275-326.
Mankiw, N.G., D. Romer, D. N. Weil, 1992, "A Contribution to the Empirics of Economic Growth", Quarterly Journal of Economics, Vol. 107, pp. 407-437.
Maraşlıoğlu, H., A. Tıktık, 1991, "Türkiye Ekonomisinde Sektörel Gelişmeler : Üretim, Sermaye Birikimi ve İstihdam 1968-1988", Devlet Planlama Teşkilatı, İktisadi Planlama Başkanlığı, DPT: 2271-İPB: 428.
Meinen G., P. Verbiest, P. De Wolf, 1998, "Perpetual Inventory Method: Service Lives, Discard Patterns and Depreciation Methods", Statistics Netherlands, Department of National Accounts.
Montiel, P., L. Serven, 2006, "Macroeconomic Stability in Developing Countries: How Much is Enough?", The World Bank Research Observer, Vol. 21, No. 2.
Organization for Economic Co-operation and Development (OECD), 1999, "ISDB 98, User's Guide", Paris.
OECD, 2009, Measuring Capital, OECD Manual.
Özatay, F., 2008, "Expansionary Fiscal Consolidations: New Evidence from Turkey", TOBB University of Economics and Technology Working Paper, No.08-05.
Özatay, F., 2009, Finansal Krizler ve Türkiye, Doğan Kitap, İstanbul.
Özmen, E., Ç. İ. Koğar, 2006, "Sectoral Balance Sheet Fragilities and the Turkish Financial Crisis of 2001", Annual Meeting of the ASSA-Middle East Economic Association, Boston, MA., 6-8 January.
Prasad, E. S., K. Rogoff, S. Wei, M. A. Köse, 2003, "Effects of Financial Globalization on Developing Countries: Some Empirical Evidence", IMF Occasional Paper, No. 220, Washington.
Rodrik, D., 1998, "Who Needs Capital-Account Convertibility?" *Essays in International Finance*, No. 207, Princeton University, New Jersey.
Romer, P., 1986, "Increasing Returns and Long Run Growth", *Journal of Political Economy*, Vol. 94, pp. 1002-37.
Saygılı, Ş., C. Cihan, 2008, "Türkiye Ekonomisinin Büyüme Dinamikleri: 1987-2007 Döneminde Büyümenin Kaynakları, Temel Sorunlar ve Potansiyel Büyüme Oranı", TÜSİAD and CBRT, No. TÜSİAD-T/2008-06/462.
Saygılı, Ş., C. Cihan, H. Yurtoğlu, 2005, "Türkiye Ekonomisinde Sermaye Birikimi, Verimlilik ve Büyüme (1972-2003): Uluslararası Karşılaştırma ve AB'ye Yakınsama Süreci", TÜSİAD Araştırma Raporları Serisi, TÜSİAD-T/2005-12/413.
Solow, R. M., 1956, "A Contribution to the Theory of Economic Growth", *Quarterly Journal of Economics*, Vol. 70, pp. 65-94.
Stiglitz, J., 2000, "Capital Market Liberalization, Economic Growth, and Instability," *World Development*, Vol. 28, No. 6, pp. 1075–1086.
Stiglitz, J., 2004, "Capital-Market Liberalization, Globalization, and the IMF," *Oxford Review of Economic Policy*, Vol. 20, No. 1, pp. 57-71.
Stiroh, K. J., 2001, "What Drives Productivity Growth?", *Economic Policy Review*, Vol. 7, No. 1.
Stulz, R., 1999, "Globalization of Equity Markets and the Cost of Capital," *NBER Working Paper* No. 7021.
Stulz, R., 2005, "The Limits of Financial Globalization," *Journal of Finance*, Vol. 60, No. 4, pp. 1595–1637.
Summers, L. H., 2000, "International Financial Crises: Causes, Prevention, and Cures." *American Economic Review*, Vol. 90, No. 2, pp. 1–16.
Swan, T. W., 1956, "Economic Growth and Capital Accumulation", *The Economic Record*, Vol. 32, pp. 334-361.
T.R. Ministry of Development, 2002, Pre-Accession Economic Program, Ankara.
T.R. Ministry of Development, 2004, Pre-Accession Economic Program, Ankara.
T.R. Ministry of Development, 2005, Pre-Accession Economic Program, Ankara.
TR. Ministry of Development, 2013, The Tenth Development Plan (2014-2018), Ankara.
Wagner, H., 2002, "Implications of Globalization for Monetary Policy," *Working Paper*, University of Hagen.
Wei, S., 2001, "Domestic Crony Capitalism and International Fickle Capital: Is There a Connection?" *International Finance*, Vol. 4, pp. 15–46.
Yaşar, P., 2008, "Alternatif Hasıla Açığı Tahmin Yöntemleri ve Phillips Eğrisi: Türkiye Üzerine Bir Çalışma, DPT Uzmanlık Tezleri, Ankara. (http://ekutup.dpt.gov.tr/ekonomi/tahmin/yasarp/hasila.pdf)